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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Julius Robson et al.	§	Art Unit:	2617
Serial No.:	10/718,412	§	Examiner:	Un C. Cho
Filed:	November 19, 2003	§		
For:	Method of Resource Allocation in a Multiple Access Wireless Communications Network	§	Atty. Dkt. No.:	16125IDUS01U (NRT.0215US)

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF PURSUANT TO 37 C.F.R § 41.37

Sir:

The final rejection of claims 1-5 and 7-40 is hereby appealed.

I. REAL PARTY IN INTEREST

The real party in interest is Nortel Networks Limited.

II. RELATED APPEALS AND INTERFERENCES

None.

III. STATUS OF THE CLAIMS

Claims 1-5 and 7-40 have been finally rejected and are the subject of this appeal. Claim 6 has been objected to but was indicated as being allowable if rewritten in independent form to include limitations of the base claim and any intervening claims.

Date of Deposit: 8-17-09

I hereby certify under 37 CFR 1.8(a) that this correspondence is being deposited with the United States Postal Service as **first class mail** with sufficient postage on the date indicated above and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313.

Cathy Hayes

IV. STATUS OF AMENDMENTS

An Amendment Under 41.33 is submitted of even date herewith to amend claim 6 into independent form to place claim 6 in condition for allowance, as indicated by the 7/29/2008 Office Action. Entry of the amendment is appropriate under 37 C.F.R. § 41.33.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The following provides a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings by reference characters, as required by 37 C.F.R. § 41.37(c)(1)(v). Each element of the claims is identified by a corresponding reference to the specification and drawings where applicable. Note that the citation to passages in the specification and drawings for each claim element does not imply that the limitations from the specification and drawings should be read into the corresponding claim element.

Independent claim 1 recites a method for use in a wireless communications network for allocating spectral resource made up of a plurality of resource units (Spec., p. 13, ln. 26 – p. 14, ln. 8) in a multiple access wireless link extending between a partition of a base station (Fig. 1:2; Spec., p. 13, ln. 12-13) and at least one child user equipment (Fig. 1:6, 24-28; Spec., p. 13, ln. 18-20) of the partition, wherein the network has at least one base station which has at least two partitions or the network has at least two base stations, each having at least one partition (Spec., p. 13, ln. 12-18), the method comprising:

> establishing a number of resource units making up a fixed allocation of resource units, said fixed allocation of resource units being the same for all user equipments of the network (Spec., p. 15, ln. 25 – p. 19, ln. 15);
>
> allocating the fixed allocation of resource units to each child user equipment in the partition (Spec., p. 15, ln. 25 – p. 19, ln. 15).

Independent claim 15 recites a wireless communication network, wherein the network has at least one base station (Fig. 1:2; Spec., p. 13, ln. 12-13) which has at least two partitions or the network has at least two base stations, each having at least one partition (Spec., p. 13, ln. 12-18), via which at least one child user equipment (Fig. 1:6, 24-28; Spec., p. 13, ln. 18-20) communicates over a wireless link which link comprises spectral resource made up of a plurality of resource units (Spec., p. 13, ln. 26 – p. 14, ln. 8) wherein the network includes a processing block (Fig. 1:5, 7; Spec., p. 27, ln. 24-31) configured to establish a number of resource units making up a fixed allocation of resource units, said fixed allocation of resource units being the same for all user equipments of the network and to allocate the fixed allocation of resource units to each child user equipment in the partition (Spec., p. 15, ln. 25 – p. 19, ln. 15).

Independent claim 24 recites a resource allocation controller (Fig. 1:5, 7; Spec., p. 27, ln. 24-31) for use in a wireless communications network for allocating spectral resource made up of a plurality of resource units (Spec., p. 13, ln. 26 – p. 14, ln. 8) in a multiple access wireless link extending between a partition of a base station and at least one child user equipment (Fig. 1:6, 24-28; Spec., p. 13, ln. 18-20) of the partition, wherein the network has at least one base station which has at least two partitions or the network has at least two base stations, each having at least one partition (Spec., p. 13, ln. 12-18), wherein the controller is configured to establish a number of resource units making up a fixed allocation of resource units, said fixed allocation of resource units being the same for all user equipments of the network; and to allocate the fixed allocation of resource units to each child user equipment in the partition (Spec., p. 15, ln. 25 – p. 19, ln. 15).

Independent claim 33 recites computer executable software code stored on a computer readable medium for establishing a number of resource units making up a fixed allocation of spectral resource made up of a plurality of resource units (Spec., p. 13, ln. 26 – p. 14, ln. 8) in a multiple access wireless link of a wireless communication network, wherein the network has at least one base station (Fig. 1:2) which has at least two partitions or the network has at least two base stations, each having at least one partition (Spec., p. 13, ln. 12-18), the code comprising:

> code to determine a measure of a maximum likely number of child user equipments per network partition (Spec., p. 16, ln. 25 – p. 17, ln. 15); and
>
> code to determine a fixed allocation of resource units based on the ratio of a number of resource units in the link per unit time to the measure, said fixed allocation of resource units being the same for all user equipments of the network (Spec., p. 15, ln. 25 – p. 19, ln. 15).

Independent claim 34 recites a programmed computer for establishing a number of resource units making up a fixed allocation of spectral resource made up of a plurality of resource units (Spec., p. 13, ln. 26 – p. 14, ln. 8) in a multiple access wireless link of a wireless communication network, which stores computer executable program code, wherein the network has at least one base station (Fig. 1:2) which has at least two partitions or the network has at least two base stations, each having at least one partition (Spec., p. 13, ln. 12-18), said code includes:

> code for determining a measure of a maximum likely number of child user equipments per network partition (Spec., p. 16, ln. 25 – p. 17, ln. 15); and
>
> code for determining the fixed allocation of resource units, said fixed allocation of resource units being same for all user equipments of the network, based on the ratio of a number of resource units in the link per unit time to the measure (Spec., p. 15, ln. 25 – p. 19, ln. 15).

Independent claim 35 recites a computer readable medium having computer executable software code stored thereon, which code is for establishing a number of resource units making up a fixed allocation of spectral resource made up of a plurality of resource units (Spec., p. 13, ln. 26 – p. 14, ln. 8) in a multiple access wireless link of a wireless communication network, wherein the network has at least one base station (Fig. 1:2) which has at least two partitions or the network has at least two base stations, each having at least one partition (Spec., p. 13, ln. 12-18), wherein the code is for carrying out the following:

> determining a measure of a maximum likely number of child user equipments per network partition (Spec., p. 16, ln. 25 – p. 17, ln. 15); and
>
> determining a fixed allocation of resource units based on the ratio of a number of resource units in the link per unit time to the measure, said fixed allocation of resource units -being the same for all user equipments of the network (Spec., p. 15, ln. 25 – p. 19, ln. 15).

Independent claim 36 recites computer executable software code stored on a computer readable medium for allocating a proportional allocation of spectral resource made up of a plurality of resource units (Spec., p. 13, ln. 26 – p. 14, ln. 8) in a multiple access wireless link of a wireless communication network, wherein the network has at least one base station (Fig. 1:2) which has at least two partitions or the network has at least two base stations, each having at least one partition (Spec., p. 13, ln. 12-18), the code comprising:

> code for discarding resource units allocated to child user equipments in a fixed allocation so as to determine remaining resource units, said fixed allocation of resource units being the same for all user equipments of the network (Spec., p. 19, ln. 16-17);
>
> code for determining the gain of the radio link between the partition and each child user equipment (Spec., p. 19, ln. 17-19); and
>
> code for allocating the remaining resource units among the child user equipments by prioritising user equipments having a high gain link (Spec., p. 19, ln. 19-23).

Independent claim 39 recites a method for use in a wireless communications network for allocating spectral resource made up of a plurality of resource units (Spec., p. 13, ln. 26 – p. 14, ln. 8) in a multiple access wireless link extending between a partition of a base station (Fig. 1:2) and at least one child user equipment (Fig. 1:6, 24-28) of the partition, wherein the network has at least one base station which has at least two partitions or the network has at least two base stations, each having at least one partition (Spec., p. 13, ln. 12-18), the method comprising:

> determining a measure of a maximum likely number of child user equipments per partition of the network (Spec., p. 16, ln. 25 – p. 17, ln. 15);
>
> calculating a fixed allocation of resource units based on the ratio of a number of resource units in the partition per unit time to the measure, said fixed allocation of resource units being the same for all user equipments of the network (Spec. p. 15, ln. 25 – p. 19, ln. 15); and
>
> allocating the fixed allocation of resource units to each child user equipment in the partition (Spec., p. 15, ln. 25 – p. 19, ln. 15).

Independent claim 40 recites a method for use in a wireless communications network for allocating spectral resource made up of a plurality of resource units (Spec., p. 13, ln. 26 – p. 14, ln. 8) in a multiple access wireless link extending between a partition of a base station (Fig. 1:2) and at least one child user equipment (Fig. 1:6, 24-28) of the partition, wherein the network has at least one base station which has at least two partitions or the network has at least two base stations, each having at least one partition (Spec., p. 13, ln. 12-18), the method comprising:

establishing a minimum number of resource units making up a fixed allocation of resource units, said fixed allocation of resource units being the same for all user equipments of the network (Spec., p. 15, ln. 25 – p. 19, ln. 15; p. 20, ln. 16-19);

allocating the fixed allocation of resource units to each child user equipment in the partition (Spec., p. 15, ln. 25 – p. 19, ln. 15); and

allocating remaining resource units which are not allocated in the fixed allocation of resource units to child user equipments, hereafter remaining resource units (Spec., p. 19, ln. 16-17), to child user equipments in the partition by:

determining the gain of the radio link between the partition and each child user equipment (Spec., p. 19, ln.17-19); and

allocating the remaining resource units among the child user equipments by prioritising user equipments having a high gain link (Spec., p. 19, ln. 19-23).

Claims 37 and 38, set forth below, includes means plus function elements, which are identified as required by 37 C.F.R. § 41.37. For each means plus function element, the structure, material, or acts described in the Specification as corresponding to each claimed function is set forth by reference to page and line number, and to the drawings, by reference characters.

Independent claim 37 recites a wireless communication network, wherein the network has at least one base station (Fig. 1:2) which has at least two partitions or the network has at least two base stations, each having at least one partition (Spec., p. 13, ln. 12-18), via which at least one child user equipment (Fig. 1:6, 24-28; Spec., p. 13, ln.18-20) communicates over a wireless link which link comprises spectral resource made up of a plurality of resource units wherein the network includes processing means (Fig. 1:5, 7; Spec., p. 27, ln. 24-31) for establishing a number of resource units making up a fixed allocation of resource units, said fixed allocation of resource units being the same for all user equipments of the network and means (Fig. 1:5, 7) for allocating the fixed allocation of resource units to each child user equipment in the partition (Spec., p. 15, ln. 25 – p. 19, ln. 15).

Independent claim 38 recites a resource allocation controller (Fig. 1:5, 7; Spec., p. 27, ln. 24-31) for use in a wireless communications network for allocating spectral resource made up of a plurality of resource units (Spec., p. 13, ln. 26 – p. 14, ln. 8) in a multiple access wireless link extending between a partition of a base station (Fig. 1:2) and at least one child user equipment (Fig. 1:6, 24-28; Spec., p. 13, ln. 18-20) of the partition, wherein the network has at least one base station which has at least two partitions or the network has at least two base stations, each having at least one partition (Spec., p. 13, ln. 12-18), wherein the controller comprises means (Fig. 1:5, 7) for establishing a number of resource units making up a fixed allocation of resource units, said fixed allocation of resource units being the same for all user equipments of the network and means (Fig. 1:5, 7) for allocating the fixed allocation of resource units to each child user equipment in the partition (Spec., p. 15, ln. 25 – p. 19, ln. 15).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Claims 1, 12-15, 24, 37 and 38 were rejected under 35 U.S.C. § 103(a) as unpatentable over the APA (the admitted prior art) in view of Sato (U.S. Patent Publication No. 2003/0069042).

B. Claims 2-4, 7, 16-18, 20, 25, 28, 26, 29, 33-35 and 39 were rejected under 35 U.S.C. § 103(a) as unpatentable over the APA in view of Sato and further in view of Wu (U.S. Patent Publication No. 2004/0125772).

C. Claims 5, 19 and 27 were rejected under 35 U.S.C. § 103(a) as unpatentable over the APA in view of Sato and Wu and further in view of Hwang (U.S. Patent Publication No. 2004/0097238).

D. Claims 8, 9, 21, 22, 30, 31 and 40 were rejected under 35 U.S.C. § 103(a) as unpatentable over the APA in view of Sato and further in view of Hwang.

E. Claims 10, 11, 23 and 32 were rejected under 35 U.S.C. § 103(a) as unpatentable over the APA in view of Sato and Hwang and further in view of Jin (U.S. Patent Publication No. 2004/0147235).

F. Claim 36 was rejected under 35 U.S.C. § 103(a) as unpatentable over Wu in view of Sato and further in view of Hwang.

VII. ARGUMENT

The claims do not stand or fall together. Instead, Appellant presents separate arguments for various independent and dependent claims. Each of these arguments is separately argued below and presented with separate headings and sub-headings as required by 37 C.F.R. § 41.37(c)(1)(vii).

A. Claims 1, 12-15, 24, 37 and 38 were rejected under 35 U.S.C. § 103(a) as unpatentable over the APA (the admitted prior art) in view of Sato (U.S. Patent Publication No. 2003/0069042).

1. Claims 1, 12-15, 24, 37, 38.

Independent claim 1 was erroneously rejected as being obvious over "admitted prior art" (APA) in view of Sato.

To make a determination under 35 U.S.C. § 103, several basic factual inquiries must be performed, including determining the scope and content of the prior art, and ascertaining the differences between the prior art and the claims at issue. *Graham v. John Deere Co.,* 383 U.S. 1, 17, 148 U.S.P.Q. 459 (1965). Moreover, as held by the U.S. Supreme Court, it is important to identify a reason that would have prompted a person of ordinary skill in the art to combine reference teachings in the manner that the claimed invention does. *KSR International Co. v. Teleflex, Inc.,* 127 S. Ct. 1727, 1741, 82 U.S.P.Q.2d 1385 (2007).

The Examiner conceded that APA does not disclose the following feature of claim 1: "establishing a number of resource units making up a fixed allocation of resource units, **said fixed allocation of units being the same for all user equipments of the network**." 7/29/2008 Office Action at 2. Instead, the Examiner cited Sato as purportedly disclosing this claim feature missing from APA. Specifically, the Examiner cited Table 6 on page 7 of Sato, as well as ¶¶ [0123]-[0139] on pages 8-9 of Sato, which refer to Table 6.

Note that Table 6 of Sato refers to allocations of various control channels, including a Pilot channel, Sync channel, Paging channel, and Access channel, to different **sectors** of a cell (**sectors** A, B, C). The control channel allocation to sectors depends on the number of base band signal processing blocks disposed (Sato, ¶ [0112]), where the base band signal processing blocks are disposed in a base station (*see* Fig. 5 of Sato, and ¶ [0004]). Thus, Table 6 describes allocating a number of channels to **sectors** that depend upon base band signal processing blocks within **a base station**. This teaching of Sato has absolutely nothing to do with a fixed allocation of resource units being the **same** for **all user equipments** of the network.

As specifically taught by Sato, one of its objects is to decrease the number of control channels to be set when the number of base band signal processing blocks (within a **base**

station) disposed is small or when the number of available base band signal processing blocks decreases due to a system failure. *Id.*, ¶ [0020]. Another object of Sato is to reallocate control channels which have been allocated to a base band signal processing block (within a base station) which is not disposed, or cannot be used due to a system failure, to another available base band signal processing block (within a base station) so that the processing capability is not exceeded, and load is distributed. *Id.*, ¶ [0021]. The allocation of control channels to base band signal processing blocks of a base station has absolutely nothing to do with the following elements of claim 1:

- establishing a number of resource units making up a fixed allocation of resource units, said fixed allocation of resource units being the same for all **user equipments** of the network;
- allocating the fixed allocation of resource units to each child **user equipment** in the partition.

Thus, it is respectfully submitted that even if APA and Sato could be hypothetically combined, the hypothetical combination of the references would not have led to the claimed subject matter.

Moreover, it is clear that a person of ordinary skill in the art would not have been prompted to combine the teachings of APA and Sato to achieve the claimed invention. As the U.S. Supreme Court has held, it is **important** to identify a reason that would have prompted a person of ordinary skill in the art to combine reference teachings in the manner that the claimed invention does. *KSR*, 127 S. Ct. at 1741. As specifically taught by the APA, "the number of resource units allocated to a child user equipment is dependent on the number of other child user equipments in that partition and so the number of resource units allocated to the child user equipments **varies** from partition to partition." Specification, p. 2, lines 7-10 (emphasis added). Thus, APA specifically **teaches away** from the invention, since APA teaches that a conventional

technique allocates different numbers of resource units to different child user equipments between different partitions, based on the number of child user equipments present in the partition. APA specifically would have led a person of ordinary skill in the art away from providing a **fixed** allocation of resource units that is the **same** for **all** user equipments of the network.

Moreover, as explained above, Sato teaches subject matter that is significantly different from the subject matter of claim 1; namely, Sato refers to allocation of control channels **to sectors** depending upon base band signal processing blocks in a base station, which has nothing to do with a fixed allocation of resource units being the same **for all user equipments** of the network.

Thus, in view of the foregoing, it is clear that a person of ordinary skill in the art would not have been prompted to combine the teachings of APA and Sato to achieve the subject matter of claim 1. The obviousness rejection of claim 1 and its dependent claims over APA and Sato is therefore clearly defective.

Similarly, the obviousness rejection of independent claims 15, 24, 37, and 38 and respective dependent claims over APA and Sato is also defective.

Reversal of the final rejection of the above claims is respectfully requested.

B. Claims 2-4, 7, 16-18, 20, 25, 26, 28, 29, 33-35 and 39 were rejected under 35 U.S.C. § 103(a) as unpatentable over the APA in view of Sato and further in view of Wu (U.S. Patent Publication No. 2004/0125772).

1. Claims 33-35, 39.

Independent claim 33 was rejected as being purportedly obvious over APA, Sato, and Wu. The rejection of claim 33 is based on the same erroneous application of APA and Sato to the following subject matter of claim 33: "said fixed allocation of resource units being the same

for **all user equipments** of the network." In view of the fact that APA and Sato clearly would not have led a person of ordinary skill in the art to the above identified feature of claim 33, the obviousness rejection of claim 33 over APA, Sato, and Wu is also defective.

In addition, Wu does not qualify as prior art under 35 U.S.C. § 103(c), since Wu and the present application were, at the time the present invention was made, owned by or subject to obligation of assignment to the same person (Nortel Networks Ltd.).

Wu was cited by the Examiner as purportedly disclosing determining a measure of a maximum likely number of child user equipments per network partition, and determining a fixed allocation of resource units based on the ratio of a number of resource units in the link per unit time to the measure. 7/29/2008 Office Action at 3. However, Wu provides no teaching or hint of a fixed allocation of resource units being the same for all user equipments of the network, as recited in claim 33. In fact, Wu teaches away from the claimed subject matter by providing a system where "**unequal** bandwidths are allocated to different users in a given sector." Wu also refers to potentially unequal subsets of assigned bandwidths in a given sector being assigned to users using an optimization process. Wu, ¶¶ [0070], [0071], [0086].

The Examiner also cited ¶¶ [0090]-[0102] of Wu as purportedly disclosing determining a measure of a maximum likely number of child user equipments per network partition. 7/29/2008 Office Action at 3. Although the cited passages refer to numbers of active users, there is no teaching in these passages of Wu regarding determining a measure of a **maximum likely number** of child user equipments per network partition.

In view of the foregoing, it is clear that the obviousness rejection of claim 33 is erroneous.

The obviousness rejection of independent claims 34, 35, and 39 is also similarly defective.

Reversal of the final rejection of the above claims is respectfully requested.

2. Claims 2, 16, 25.

Claims 2, 16, 25 and 27 depend from respective base claims 1, 15 and 24. Therefore, in view of the allowability of base claims over APA and Sato, it is respectfully submitted that the obviousness rejection of these claims over APA, Sato, and Wu has been overcome.

Moreover, it is respectfully submitted that 2, 16, 25, and 27 are further allowable for additional reasons stated above with respect to claim 33.

Reversal of the final rejection of the above claims is respectfully requested.

3. Claims 3, 4, 7, 17, 18, 20, 26, 28, 29.

In view of the allowability of base claims 1, 15 and 24 over APA and Sato, it is respectfully submitted that the obviousness rejection of dependent claims over APA, Sato, and Wu has been overcome.

Also, Wu has been disqualified as prior art under 35 U.S.C. § 103(c).

Reversal of the final rejection of the above claims is respectfully requested.

C. Claims 5, 19 and 27 were rejected under 35 U.S.C. § 103(a) as unpatentable over the APA in view of Sato and Wu and further in view of Hwang (U.S. Patent Publication No. 2004/0097238).

1. Claims 5, 19, 27.

In view of the allowability of base claims 2, 16, and 25 over APA, Sato and Wu, discussed above, it is respectfully submitted that the obviousness rejection of dependent claims 5, 19 and 27 over APA, Sato, Wu, and Hwang has also been overcome.

Reversal of the final rejection of the above claims is respectfully requested.

D. Claims 8, 9, 21, 22, 30, 31 and 40 were rejected under 35 U.S.C. § 103(a) as unpatentable over the APA in view of Sato and further in view of Hwang..

1. Claim 40.

Independent claim 40 was rejected as purportedly obvious over APA, Sato, and Hwang. The obviousness rejection of claim 40 is also defective in view of the mis-application of APA and Sato as purportedly disclosing a fixed allocation of resource units being the same for all user equipments of the network.

Moreover, the Examiner cited Hwang as purportedly disclosing determining the gain of the radio link between the partition and each child user equipment, and allocating the remaining resource units among the child user equipments by prioritizing user equipments having a high gain link. 7/29/2008 Office Action at 7. However, Hwang fails to disclose a fixed allocation of resource units being the same for all user equipments of the network. In fact, Hwang teaches away from the present invention by providing a system where "frequency resources are assigned to a mobile station (MS) according to one of the distance between the MS and a BS, received signal strength, or interference from adjacent BSs." Hwang, ¶ [0065]. This is a further reason that a person of ordinary skill in the art would not have been prompted to combine APA, Sato, and Hwang. Therefore, the obviousness rejection of claim 40 is also clearly defective.

Reversal of the final rejection of the above claim is respectfully requested.

2. Claims 8, 9, 21, 22, 30, 31.

In view of the allowability of base claims over APA and Sato, it is respectfully submitted that the obviousness rejection dependent claims over APA, Sato, and Hwang has also been overcome.

Moreover, the above claims are further allowable for the additional reasons stated above with respect to claim 40.

Reversal of the final rejection of the above claims is respectfully requested.

E. Claims 10, 11, 23 and 32 were rejected under 35 U.S.C. § 103(a) as unpatentable over the APA in view of Sato and Hwang and further in view of Jin (U.S. Patent Publication No. 2004/0147235).

1. Claims 10, 11, 23, 32.

In view of the allowability of base claims over APA and Sato, it is respectfully submitted that the obviousness rejection of dependent claims over APA, Sato, Hwang and Jin has been overcome.

Moreover, it is respectfully submitted that the obviousness rejection of these claims is further defective in view of the mis-application of Hwang to the claimed invention, as discussed above in connection with claim 40.

Reversal of the final rejection of the above claims is respectfully requested.

F. Claim 36 was rejected under 35 U.S.C. § 103(a) as unpatentable over Wu in view of Sato and further in view of Hwang.

1. Claim 36.

Independent claim 36 was rejected as purportedly obvious over Wu, Sato, and Hwang.

The obviousness rejection is defective in light of the mis-application of Sato as purportedly disclosing "fixed allocation of resource units being the same for all user equipments of the network," as recited in claim 36. Moreover, the obviousness rejection of claim 36 is further based on the mis-application of Hwang as purportedly disclosing determining the gain of the radial link between the partition and each child user equipment, and allocating the remaining

resource units among the child user equipments by prioritizing user equipments having a high gain link, as discussed above in connection with claim 40.

In view of the foregoing, it is respectfully submitted that the obviousness rejection of claim 36 is erroneous.

Reversal of the final rejection of the above claims is respectfully requested.

CONCLUSION

In view of the foregoing, reversal of all final rejections and allowance of all pending claims is respectfully requested.

Respectfully submitted,

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/Dan C. Hu/

Dan C. Hu
Registration No. 40,025
TROP, PRUNER & HU, P.C.
1616 South Voss Road, Suite 750
Houston, TX 77057-2631
Telephone: (713) 468-8880
Facsimile: (713) 468-8883

VIII. APPENDIX OF APPEALED CLAIMS

The claims on appeal are (claim 6 was indicated as containing allowable subject matter):

1. A method for use in a wireless communications network for allocating spectral resource made up of a plurality of resource units in a multiple access wireless link extending between a partition of a base station and at least one child user equipment of the partition, wherein the network has at least one base station which has at least two partitions or the network has at least two base stations, each having at least one partition, the method comprising:

establishing a number of resource units making up a fixed allocation of resource units, said fixed allocation of resource units being the same for all user equipments of the network;

allocating the fixed allocation of resource units to each child user equipment in the partition.

2. A method according to claim 1 wherein the number of resource units making up fixed allocation is established by:

determining a measure of a maximum likely number of child user equipments per partition of the network;

calculating the fixed allocation of resource units based on the ratio of a number of resource units in the partition per unit time to the measure.

3. A method according to claim 1 wherein the fixed allocation is a selected minimum number of resource units.

4. A method according to claim 1 wherein the spectral resource is made up of a number of frequency channels and each resource unit is a sub-set of the spectral resource smaller than a frequency channel.

5. A method according to claim 2 wherein the measure of the maximum likely number of user equipments per partition is derived according to a Poisson distribution of the average number of user equipments per partition of the network.

7. A method according to claim 1 wherein resource units which are not allocated in the fixed allocation of resource units to child user equipments remain unallocated to user equipments.

8. A method according to claim 1 wherein the method additionally comprises allocating remaining resource units which are not allocated in the fixed allocation of resource units to child user equipments, hereafter remaining resource units, to child user equipments in the partition by:

determining the gain of the radio link between the partition and each child user equipment; and

allocating the remaining resource units among the child user equipments by prioritising user equipments having a high gain link.

9. A method according to claim 1 wherein the method additionally comprises allocating remaining resource units which are not allocated in the fixed allocation of resource units to child user equipments, hereafter remaining resource units, to child user equipments in the partition by:

determining the gain of the radio link between the partition and each child user equipment; and

allocating the remaining resource units among the child user equipments in the partition in proportion to the gain of the radio links to the child user equipments.

10. A method according to claim 1 additionally comprising:

determining the gain of the radio link between the partition and each child user equipment of the partition; and

regulating the transmit power of each child user equipment according to the determined gain for that user equipment such that lower gain user equipments transmit with higher power than higher gain user equipments.

11. A method according to claim 1 additionally comprising:

determining the gain of the radio link between the partition and each child user equipment of the partition; and

regulating the transmit power of each child user equipment such that the transmit power is inversely proportional to the gain.

12. Computer executable software code stored on a computer readable medium for making a computer execute the method of claim 1.

13. A programmed computer, which stores computer executable program code for making the computer execute the method of claim 1.

14. A computer readable medium having computer executable software code stored thereon, which code is for making a computer execute the method of claim 1.

15. A wireless communication network, wherein the network has at least one base station which has at least two partitions or the network has at least two base stations, each having at least one partition, via which at least one child user equipment communicates over a wireless link which link comprises spectral resource made up of a plurality of resource units wherein the network includes a processing block configured to establish a number of resource units making up a fixed allocation of resource units, said fixed allocation of resource units being the same for all user equipments of the network and to allocate the fixed allocation of resource units to each child user equipment in the partition.

16. A network according to claim 15 wherein the number of resource units making up the fixed allocation is established by determining a measure of a maximum likely number of child user equipments per partition and calculating the fixed allocation of resource units based on the ratio of a number of resource units in the partition per unit time to the measure.

17. A network according to claim 15 wherein the fixed allocation is a selected minimum number of resource units.

18. A network according to claim 15 wherein the spectral resource is made up of a number of frequency channels and each resource unit is a sub-set of the spectral resource smaller than a frequency channel.

19. A network according to claim 16 wherein the measure of the maximum likely number of user equipments per partition is derived according to a Poisson distribution of the average number of user equipments per partition.

20. A network according to claim 15 wherein resource units which are not allocated in the fixed allocation of resource units to child user equipments remain unallocated to user equipments.

21. A network according to claim 15 wherein, for a given partition, the processing block is configured to allocate remaining resource units which are not allocated in the fixed allocation of resource units to each user equipment by allocating the remaining resource units among the child user equipments by prioritising user equipments having a high gain link to the partition.

22. A network according to claim 15 wherein, for a given partition, the processing block is configured to allocate remaining resource units which are not allocated in the fixed allocation of resource units to each user equipment by allocating the remaining resource units among the child user equipments in the partition in proportion to the gain of the radio links between the child user equipments and the partition.

23. A network according to claim 15 wherein the transmit power of each child user equipment is regulated according to the gain between that user equipment and its partition such that lower gain user equipments transmit with higher power than higher gain user equipments.

24. A resource allocation controller for use in a wireless communications network for allocating spectral resource made up of a plurality of resource units in a multiple access wireless link extending between a partition of a base station and at least one child user equipment of the partition, wherein the network has at least one base station which has at least two partitions or the network has at least two base stations, each having at least one partition, wherein the controller is configured to establish a number of resource units making up a fixed allocation of resource units, said fixed allocation of resource units being the same for all user equipments of the network; and to allocate the fixed allocation of resource units to each child user equipment in the partition.

25. A controller according to claim 24 wherein the number of resource units making up the fixed allocation of resource units is established by obtaining a measure of a maximum likely number of child user equipments per partition of the network and obtaining a fixed allocation of resource units based on the ratio of a number of resource units in the partition per unit time to the measure.

26. A controller according to claim 24 wherein the spectral resource is made up of a number of frequency channels and each resource unit is a sub-set of the spectral resource smaller than a frequency channel.

27. A controller according to claim 25 wherein the measure of the maximum likely number of user equipments per partition is derived according to a Poisson distribution of the average number of user equipments per partition.

28. A controller according to claim 24 wherein the fixed allocation is a selected minimum number of resource units.

29. A controller according to claim 24 wherein resource units which are not allocated in the fixed allocation of resource units to child user equipments remain unallocated to user equipments.

30. A controller according to claim 24 which is configured to allocate remaining resource units which it did not allocate in the fixed allocation of resource units by prioritising child user equipments of the partition having a high gain link to the partition.

31. A controller according to claim 24 which is configured to allocate remaining resource units which it did not allocate in the fixed allocation of resource units by allocating the remaining resource units among the child user equipments in the partition in proportion to the gain of the radio links to the child user equipments.

32. A controller according to claim 24 for deployment in a network in which the transmit power of each child user equipment is regulated according to the gain between that user equipment and its partition such that lower gain user equipments transmit with higher power than higher gain user equipments,

33. Computer executable software code stored on a computer readable medium for establishing a number of resource units making up a fixed allocation of spectral resource made up of a plurality of resource units in a multiple access wireless link of a wireless communication network, wherein the network has at least one base station which has at least two partitions or the network has at least two base stations, each having at least one partition, the code comprising:

code to determine a measure of a maximum likely number of child user equipments per network partition; and

code to determine a fixed allocation of resource units based on the ratio of a number of resource units in the link per unit time to the measure, said fixed allocation of resource units being the same for all user equipments of the network,.

34. A programmed computer for establishing a number of resource units making up a fixed allocation of spectral resource made up of a plurality of resource units in a multiple access wireless link of a wireless communication network, which stores computer executable program code, wherein the network has at least one base station which has at least two partitions or the network has at least two base stations, each having at least one partition, said code includes:

code for determining a measure of a maximum likely number of child user equipments per network partition; and

code for determining the fixed allocation of resource units, said fixed allocation of resource units being same for all user equipments of the network, based on the ratio of a number of resource units in the link per unit time to the measure.

35. A computer readable medium having computer executable software code stored thereon, which code is for establishing a number of resource units making up a fixed allocation of spectral resource made up of a plurality of resource units in a multiple access wireless link of a wireless communication network, wherein the network has at least one base station which has at least two partitions or the network has at least two base stations, each having at least one partition, wherein the code is for carrying out the following:

determining a measure of a maximum likely number of child user equipments per network partition; and

determining a fixed allocation of resource units based on the ratio of a number of resource units in the link per unit time to the measure, , said fixed allocation of resource units - being the same for all user equipments of the network,.

36. Computer executable software code stored on a computer readable medium for allocating a proportional allocation of spectral resource made up of a plurality of resource units in a multiple access wireless link of a wireless communication network, wherein the network has at least one base station which has at least two partitions or the network has at least two base stations, each having at least one partition, the code comprising:

code for discarding resource units allocated to child user equipments in a fixed allocation so as to determine remaining resource units, said fixed allocation of resource units being the same for all user equipments of the network;

code for determining the gain of the radio link between the partition and each child user equipment; and

code for allocating the remaining resource units among the child user equipments by prioritising user equipments having a high gain link.

37. A wireless communication network, wherein the network has at least one base station which has at least two partitions or the network has at least two base stations, each having at least one partition, via which at least one child user equipment communicates over a wireless link which link comprises spectral resource made up of a plurality of resource units wherein the network includes processing means for establishing a number of resource units making up a fixed allocation of resource units, said fixed allocation of resource units being the same for all user equipments of the network and means for allocating the fixed allocation of resource units to each child user equipment in the partition.

38. A resource allocation controller for use in a wireless communications network for allocating spectral resource made up of a plurality of resource units in a multiple access wireless link extending between a partition of a base station and at least one child user equipment of the partition, wherein the network has at least one base station which has at least two partitions or the network has at least two base stations, each having at least one partition, wherein the controller comprises means for establishing a number of resource units making up a fixed allocation of resource units, said fixed allocation of resource units being the same for all user equipments of the network and means for allocating the fixed allocation of resource units to each child user equipment in the partition.

39. A method for use in a wireless communications network for allocating spectral resource made up of a plurality of resource units in a multiple access wireless link extending between a partition of a base station and at least one child user equipment of the partition, wherein the network has at least one base station which has at least two partitions or the network has at least two base stations, each having at least one partition, the method comprising:

determining a measure of a maximum likely number of child user equipments per partition of the network;

calculating a fixed allocation of resource units based on the ratio of a number of resource units in the partition per unit time to the measure, said fixed allocation of resource units -being the same for all user equipments of the network,; and

allocating the fixed allocation of resource units to each child user equipment in the partition.

40. A method for use in a wireless communications network for allocating spectral resource made up of a plurality of resource units in a multiple access wireless link extending between a partition of a base station and at least one child user equipment of the partition, wherein the network has at least one base station which has at least two partitions or the network has at least two base stations, each having at least one partition, the method comprising:

establishing a minimum number of resource units making up a fixed allocation of resource units, said fixed allocation of resource units being the same for all user equipments of the network;

allocating the fixed allocation of resource units to each child user equipment in the partition; and

allocating remaining resource units which are not allocated in the fixed allocation of resource units to child user equipments, hereafter remaining resource units, to child user equipments in the partition by:

determining the gain of the radio link between the partition and each child user equipment; and

allocating the remaining resource units among the child user equipments by prioritising user equipments having a high gain link.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.